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ABSTRACT

A study was conducted to determine if children's level of classification skill would mediate the development of their occupational stereotypes. The intent of the study was to describe differences in such stereotypes that occurred at different levels of grade and classification skill, as well as to extend the data dealing with sex differences in occupational stereotypes. Seventy-two children, thirty-five males and thirty-seven females, from grades 1, 3, and 5 of a Catholic elementary school responded to an instrument that measured their gender stereotyping of adult occupations. Prior to the administration of the dependent measure, the subjects completed a series of standard Piagetian tasks which divided them into three levels of cognitive development with regard to classification skills. Findings indicate that (1) grade effects occurred between grade 1 and the two upper grades, (2) subjects possessing multiple classification abilities differed from those in the two lower levels of classification skill, and (3) children of both sexes at all grades and levels of classification skill were markedly flexible in their responses when compared to an adult validation sample. (Implications for programs of career education are discussed in terms of social learning and cognitive developmental theories.) (LRA)

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# CHILDREN'S OCCUPATIONAL STEREOTYPES AS A FUNCTION OF CLASSIFICATION SKILL AND GRADE LEVEL

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## ABSTRACT

# Children's Occupational Stereotypes as a Function of Classification Skill and Grade Level

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The hypothesis under study was that a child's level of classification skill would mediate the development of his/her occupational stereotypes. The intent of the study was to describe differences in such stereotypes that occurred at different levels of grade and classification skill, as well as to extend the data dealing with sex differences in occupational stereotypes. Seventy-two children: 35 male and 37 female, from grades one, three, and five of a Catholic elementary school responded to an instrument that measured their gender stereotyping of adult occupations. Prior to the administration of this dependent measure, the subjects completed a series of standard Piagetian tasks which divided them into three levels of cognitive development with regard to classification skills. Data analysis made use of one- and two-way ANOVA, protected t-tests, and chi square statistics. Both main effects were significant. Grade effects occurred between grade one and the two upper grades ($p < .01$). Subjects possessing multiple classification abilities differed from those in the two lower levels of classification skill ($p < .10$). Children of both sexes at all grades and levels of classification skill were markedly flexible in their responses when compared to an adult validation sample. Implications for programs of career education are discussed in terms of social learning and cognitive developmental theories.

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# INTRODUCTION

Recently, efforts have been directed toward establishing career education in the schools in a systematic attempt to increase the career options of children, to develop their understanding of work, and to establish their familiarity with a wide variety of occupations (Miller, 1972; New York State Education Department, 1971; Vincenzi, 1977; Woal, 1976; Woolever, 1976). While factors such as social learning history, individual situational differences, and media exposure cannot be controlled, it appears that the schools can be a potential source of occupational information - one that counters the traditional sex role stereotypes that children are exposed to elsewhere. This is essential if career education is to be effective in broadening the range of occupational options that children perceive to be available to them. A more flexible and situationally adaptive approach to behavior will be needed if today's children are to function in an increasingly complex society. (Bem, 1975; Beuf, 1974; Crow & Taebel, 1976; Iglitzin, 1972; Lerner, Benson, & Vincent, 1976a, 1976b; List, 1976; Looft, 1971a, 1971b; Miller, 1972; Mott & Moore, 1976; Panek, Rush, & Greenawalt, 1977; Scheresky, 1977; Schlossberg & Goodman, 1972; Shepard & Hess, 1975; Siegel, 1973; Tibbetts, 1975; Woal, 1976). This increased range of options should help stop the funneling effect that has tended to channel the sexes into different and exclusive ranges of occupations (Hedges, 1970; Lipman-Blumen, 1976; Panek et al, 1977; Parrish, 1974; Quinn, 1979; Russo, 1976; Waldman & McEaddy, 1974).

Currently, attempts are underway to design elementary career education education programs to meet these goals and to investigate the effects of such programs. These efforts have indicated a need for more empirical data regarding how young children define occupational stereotypes and

how these stereotypes develop. This information should prove of value in that programs of career education could be implemented as soon as children are able to benefit from them (Kirchner & Vondracek, 1973; Parks, 1976; Thompson & Bentler, 1971; Vondracek & Kirchner, 1974). Some of these investigators have concluded that such programs should begin as early as pre-school, while others propose that grade three or four would be more appropriate.

In this report, occupational stereotypes are considered to be a specific type of sex role stereotype. Any investigation of how such stereotypes develop is complicated by the fact that stereotypes evolve from societal expectations that are subtley conveyed and reinforced (Maccoby & Jacklin, 1974; Mischel, 1966, 1970), and therefore are not easily experimentally controlled. It also appears to be the case that the development of concepts of sex roles, like all other concepts a child holds, are limited by cognitive skills. This would imply that they will undergo orderly, age-related change (Kohlberg, 1966; Maccoby & Jacklin, 1974; Tremaine, Ein, & Garrett, 1976). Accordingly, studies of children's occupational stereotypes have been largely guided by two theoretical perspectives, those of social learning and cognitive developmental theory.

It appears that mechanisms of <u>both</u> social learning and cognitive development are operative and account for the empirical observations regarding children's occupational stereotypes. One group of researchers has detailed a model for the interaction of these two mechanisms in the development of sex role concepts in children (Tremaine et al, 1976). In a study of occupational stereotypes in elementary school-aged children (Garrett, Ein, & Tremaine, 1977), they found the older children to be more flexible in their occupational stereotyping than the younger ones.

They remark that the older children are at a cognitively more sophisticated level of classification skill than the younger ones. This implies that they are able to use an abstract classification scheme with several categories - such as a continuum of male-female choices rather than a single set of extreme categories such as only male or only female (Garrett et al, 1977). The rigidity of response noted in the younger students apparently reflected their use of these extremes in cognitive classification. The authors interpret these results as supporting a model that emphasizes changes in cognitive structures and processes, in conjunction with social learning mechanisms.

Although a model such as this one (Tremaine et al, 1976) addresses the question of cognitive mediation of social information directly, these researchers used grade level as the independent variable in their design. It would seem of interest to divide children into groups by classification abilities rather than age or grade and examine the resulting differences in the flexibility of their occupational stereotypes. This would avoid the overlap of cognitive levels that can occur within age/grade levels (Flavell, 1977) and allow for classification abilities to be examined directly as an independent variable. Little research to date has addressed this issue directly in terms of design. It therefore appeared to be a constructive effort to examine directly the relationship of classification abilities to occupational stereotypes.

It was the purpose of this study to examine whether Piagetian classification skills might be a cognitive ability related to occupational sterotyping since these skills would dictate the framework within which a child processes information. The intent was to discover if knowing a child's level of classification skill, along with his/her grade level and sex might prove more helpful than any single factor in describing

the development of occupational stereotypes. It was hypothesized that classification skill would mediate the development of these stereotypes in such a way that children having more advanced classification operations would have more flexible occupational stereotypes. Similiarly, children with less advanced, preoperational classification skills would exhibit less flexible stereotypic concepts due to their major reliance on exclusive bipolar categories.

A further intent of the study was to describe the differences in occupational stereotypes that occurred at different levels of grade and classification skill, as well as to extend the data dealing with sex differences in occupational stereotypes. Increased level of cognitive sophistication was gauged by performance on a series of Piagetian classification tasks. It was assumed that older children (i.e. higher grade levels) will have increased amounts of social learning experience, thus allowing for manipulation of these two variables.

It was anticipated that the ability to use multiple classification systems, which generally emerges around ages eight to ten (Inhelder & Piaget, 1964), will be essential to the ability to hold flexible occupational stereotypes and to assimilate information about non-traditional occupational participation. It would seem that this ability should be present if career education programs are to have maximum effect. Yet little research to date has examined this cognitive variable directly. It was anticipated that classification skill would account for qualitative differences in children's occupational stereotypes.

## METHOD

### Subjects

The subjects in this study were 72 elementary school children: 35 male and 37 female. All were enrolled in grades one (N = 26), three (N = 26), and five (N = 20) of a private Catholic school located in the city of Albany, New York.

The sample was not randomly selected, but made use of available groups. Initially, all 154 children in the three grades were administered a series of four Piagetian classification tasks. This resulted in their assignment to three levels of classification skill.

Of the 154 subjects who completed the classification tasks, 72 were selected to fill cells of levels within the three grades. Forty-one subjects were eliminated for various reasons in order to ensure homogeneity of level response across grades. An attempt was made to compose cells of half male and half female subjects and to keep cell sizes equal. After attending to these concerns, a table of random numbers was used to select the subjects who would participate further in the study.

The final distribution of subjects who participated in both the independent and dependent portions of the study is presented in Table 1. Unfortunately, even though all of the children enrolled in the school at these grade levels were interviewed, equal cell assignments could not be achieved.

Table 1

Distribution of Subjects Interviewed According to Independent Attributes

| Grade | Classification Ability | Sex Female | Sex Male | Cell Totals | Grade Totals |
|---|---|---|---|---|---|
| 1 | I | 6 | 6 | 12 | 26 |
| | II | 5 | 5 | 10 | |
| | III | 3 | 1 | 4 | |
| 3 | I | 5 | 2 | 7 | 26 |
| | II | 5 | 5 | 10 | |
| | III | 3 | 6 | 9 | |
| 5 | I | 0 | 0 | 0 | 20 |
| | II | 5 | 5 | 10 | |
| | III | 5 | 5 | 10 | |
| | Totals | 37 | 35 | | 72 |

Level Totals: Level I - 19, Level II - 30, Level III - 23

Instruments

Independent Measure

The independent variable, level of Piagetian classification skill, was operationally defined by successful performance on a series of Piagetian classification tasks. These tasks were individually administered by four female interviewers, aged 24 - 26, in sessions of twenty to thirty minutes in length. These tasks have been successfully used by a large number of researchers to operationally define classification ability in children (Biehler, 1974; Flavell, 1977; Inhelder & Piaget, 1964; Phillips, 1975; Piaget, 1968).

A spontaneous sorting task was used by way of introduction as well as to establish the class criteria initially noted by the child. Success at the next task, directed sorting, but not on further tasks constituted assignment to Level I. Students at this level possessed pre-operational classification skills, specifically, the ability to notice more than one criterion for classification, but did not exhibit class inclusion abilities.

Success at the third task, class inclusion, but not the fourth task, constituted assignment to Level II. These subjects were at the level of concrete operations, possessing an ability to compare extensions of subclasses. Level III, multiple classification ability, constitutes a more sophisticated level of concrete operations, i.e. the ability to classify an element simultaneously in terms of two or more criteria.

Dependent Measure

The dependent measure consisted of open-ended interview questions and forced-choice responses to an occupational inventory developed for use in this study. The initial step in developing the inventory involved collecting responses from an adult validation sample. A decision was made, based on the results of this sample, that it was justifiable to assume that there were consensually endorsed male/female occupational stereotypes existing in the community under study. Therefore, it was assumed that the subjects had various amounts of exposure to these stereotypes. Prior to the main study, the instrument was pilot tested with ten first graders in a Catholic elementary school other than the one used in the main study. Test-retest reliability, using a Pearson $r$ correlation coefficient was $r(8) = .82$, $p < .01$.

Procedure

During the initial week of testing, all of the students in grades one, three, and five were administered the Piagetian classification tasks. This was accomplished in individual sessions of twenty to thirty minutes in length by four female interviewers aged 24 - 26. This process resulted in subjects' assignment to one of the three levels of classification ability.

Of these students, 72 were assigned to cells of level within grade and participated in the dependent portion of the study. Once selected, the students were listed alphabetically by homeroom and the lists were distributed to the homeroom teachers. This assured that, during administration of the dependent measure, the experimenter was not aware of the child's attained level of classification skill or previous responses. Inventory responses were matched with subjects' classification task outcomes later.

Each of these 72 subjects returned for a second session during the final two weeks of the study. These sessions were individual, approximately 20 minutes in length, and administered by one female experimenter, aged 26. Responses to the open-ended questions were tape recorded and transcribed later. Each child was asked several open-ended questions regarding their personal occupational choices. Next, they were asked to complete an occupational inventory. The child was asked to respond "Men, Ladies, or Both" to the question, "Who can be a(n) _____?" for each of a series of 27 occupations. The experimenter read aloud each occupation along with a description of it. The children were permitted to follow along and circle their

answers on the response sheet. Even the youngest subjects were able to sight read most of the inventory items and all of the children seemed to enjoy participating in this manner rather than merely responding orally. Uniformity of procedure was ensured by the experimenter and/or child reading aloud each job, followed by a brief oral description of the job by the experimenter. According to the number of times a child responded that "Both" men and women could do a particular job, s/he was assigned a flexibility score ranging from 1 to 27. Subsequently, the children were questioned about how they had made their decisions, i.e. what criteria helped them in deciding who could do the various jobs.

Each interview was preceded by a discussion about jobs in general, during which the experimenter explained what would occur during the interview and how the child should indicate his/her responses. Some sample questions were also administered at this time. All of the children understood the procedure and the majority of them, excepting for a few shy ones, participated enthusiastically. No time limits were imposed during the interview sessions and discussion was encouraged. As a reward for their participation, the children were allowed to listen to a portion of the tape recording at the end of the session.

## RESULTS

### Occupational Inventory

In scoring the occupational inventory, each child was assigned one point for each time s/he responded that "Both" men and women could do a particular job. This resulted in each child being assigned a "flexibility score" ranging from 1 to 27. Mean flexibility scores were tabulated for the factors of level of classification skill, grade level, and sex as well as for combinations of these three independent variables. Table 2 details mean score data for these three variables and for the total sample. Student responses were compared on each of these variables. Interaction effects among the three variables were also examined using one- and two-way analysis of variance (ANOVA) and *t*-tests. Level of classification skill and grade level accounted for the main significant differences in flexibility scores. No significant interaction effects were noted, nor were there notable significant differences in the responses of the sexes.

Table 2

Mean Flexibility Scores
for Categories of the Independent Variables

| Variable | | Mean Score | Standard Deviation | Number of Subjects |
|---|---|---|---|---|
| Level of Classification Ability | I | 16.53 | 5.37 | 19 |
| | II | 16.47 | 5.30 | 30 |
| | III | 19.49 | 5.37 | 23 |
| Grade Level | 1 | 14.81 | 5.71 | 26 |
| | 3 | 18.81 | 4.92 | 26 |
| | 5 | 19.00 | 4.60 | 20 |
| Sex | F | 16.54 | 4.23 | 37 |
| | M | 18.34 | 6.28 | 35 |

One-way ANOVA of level means indicated that significant differences existed between the students possessing different levels of classification skill, $F(2,69) = 2.309$, $p < .10$. Protected $t$-tests (Welkowitz, Ewen, & Cohen, 1976) further indicated that these significant differences occurred between Level III and the two lower levels: I - III, $t(69) = -1.83$, $p < .10$; II - III, $t(69) = -1.97$, $p < .10$. Mean scores for Levels I and II did not differ significantly.

One-way ANOVA of grade means also proved to be significant, $F(2,69) = 5.247$, $p < .01$. Protected $t$-tests (Welkowitz et al, 1976) showed that the significant differences here occurred between grade one and the two upper grades: 1 - 3, $t(69) = -2.81$, $p < .01$; 1 - 5, $t(69) = -2.47$, $p < .01$. Mean scores for grades three and five did not differ significantly.

No significant differences in the overall flexibility scores of the sexes were noted.

Collapsing scores across sex, a two-way ANOVA analyzed score as a function of grade and level of classification skill. Results indicated that only the main effect of grade was significant, $F(2,64) = 3.96$, $p < .02$. It should be noted here that this ANOVA calculation lacked power. Cell size was generally small and the presence of empty cells resulted in higher levels of classification skill becoming confounded with higher grade levels. As Table 2 indicated, the trend for classification skill to account for differences in the flexibility scores of children in the three grades is definitely present. In addition, the one-way ANOVA of level means collapsed across grades indicated that level of classification skill was operative. It is likely that the loss of power in the two-way ANOVA wiped out the presence of this effect.

Children of both sexes in all grades and levels of classification skill were markedly flexible in their responses to the occupational inventory. They rated 55% of the occupations as being something that both men and women could do, whereas the adult validation sample indicated that only 11% of the occupations were not specifically male- or female-associated. In many cases where the adults failed to reach consensus regarding the stereotypes of a particular job, the children tended to see it as the domain of both sexes.

There were some significant differences between the response patterns of the sexes, with the males tending to be more likely to respond "Both". The effect of grade in this regard was the most pronounced of the three independent variables, with the older children tending to be more flexible than the younger ones.

Overall, the occupational inventory seemed to indicate that children become more flexible in their occupational stereotypes in grades three and five. Also, the Level III children possessing multiple classification skills tended to be more flexible than children at the other two levels. However, no significant interaction effects were noted. It would appear to be the case that both factors are accounting for increased flexibility, but the relationship between them is not clear. Whether or not one influences the other can not be determined on the basis of this data.

Open-ended Questions

1. What would you like to be when you grow up?

Tables 3 and 4 detail the occupations selected by the children in response to this question according to sex.

Numerically, the sexes did not differ significantly. The girls named a total of 19 jobs, while the boys named 22. The number of choices named by each group was also similiar (Girls = 67, Boys = 63) as were the

mean number of choices per child - Girls = 1.8, Boys = 1.8. The girls tended to cluster somewhat more than the boys. Sixty-three percent of their total choices fell within three occupations - those of nurse, teacher, and secretary. Forty-nine percent of the boys choices fell within the top three jobs - those of policeman, fireman, and athlete. In both sexes, approximately 20% of the children mentioned the occupations of their parents among their choices - Girls = 19%, Boys = 23%.

Although both sexes named similiar numbers of jobs, approximately twenty, only five jobs were named by both boys and girls. Artist and veterinarian were named by equal numbers of both sexes, one or two each. Doctor, police officer, and scientist were named by both sexes, but were named at least twice as frequently by the boys.

Of the 19 occupations named by the girls, 42% of these were traditionally female-stereotyped occupations. The remaining 58% were equally divided between male- and neutral-associated occupations, as defined by the adult validation sample. In contrast, 68% of the occupations named by the boys were traditionally male-associated, while the remaining ones were neutral in association or jobs for which adult consensus was split between a neutral- and male-association. The boys named no female-associated jobs among their choices.

A point that is striking here is that children do not apply their egalitarian perceptions, as gauged by the occupational inventory, to their own occupational choices - particularly the boys. This is not due to lack of familiarity with the jobs on the inventory. Over 40% of the occupations named by each of the sexes were among those on the occupational inventory later administered to the children.

Table 3

Children's Responses to the question,
"What would you like to be when you grow up?"
Female Responses

| Occupation | Adult Consensus * | Number of Times Given | Percent of Total Female Sample N = 37 |
|---|---|---|---|
| Nurse | Women | 19 | 51% |
| Teacher | Both | 18 | 49% |
| Secretary | Women | 5 | 13% |
| Model | Women | 3 | 8% |
| Actress/t.v. star | Women | 2 | 5% |
| Artist | Both | 2 | 5% |
| Doctor | Men/Both | 2 | 5% |
| Farmer | Men | 2 | 5% |
| Scientist | Men/Both | 2 | 5% |
| Waitress | Women | 2 | 5% |
| Bus Driver | Men | 1 | 3% |
| Cashier | Women | 1 | 3% |
| Cowgirl | Women | 1 | 3% |
| Cruise Director | Both | 1 | 3% |
| Gymnast | Both | 1 | 3% |
| Mother | Women | 1 | 3% |
| Police Officer | Men | 1 | 3% |
| Singer | Both | 1 | 3% |
| Veterinarian | Men | 1 | 3% |
| Don't Know | | 1 | 3% |
| Total Number of Choices | | 67 | |
| Selected Occupation of Parent(s) | | 7 | 19% |

* Where the occupation was not included in the items presented to the adults, census data and informal questioning were used to determine the stereotypic association of the occupation.

Table 4

Children's responses to the question,
"What would you like to be when you grow up?'
Male Responses

| Occupation | Adult Consensus * | Number of Times Given | Percent of Total Male Sample N = 35 |
|---|---|---|---|
| Policeman | Men | 15 | 43% |
| Fireman | Men | 9 | 26% |
| Athlete | Both | 7 | 20% |
| Scientist | Men/Both | 4 | 11% |
| Doctor | Men/Both | 3 | 9% |
| Mechanic | Men | 3 | 9% |
| Military | Men | 3 | 9% |
| Artist | Both | 2 | 6% |
| Construct'n Worker | Men | 2 | 6% |
| Lawyer | Men | 2 | 6% |
| Cook | Men/Both | 2 | 6% |
| Airplane Pilot | Men | 1 | 3% |
| Ambulance Att'ndnt | Both | 1 | 3% |
| Carpenter | Men | 1 | 3% |
| Engineer (railroad) | Men | 1 | 3% |
| Lumberjack | Men | 1 | 3% |
| President | Men | 1 | 3% |
| Real Estate | Both | 1 | 3% |
| Telephone Lineman | Men | 1 | 3% |
| Truck Driver | Men | 1 | 3% |
| Veterinarian | Men | 1 | 3% |
| Weight Lifter | Men | 1 | 3% |
| Don't Know | | 2 | 6% |
| Total Number of Choices | | 63 | |
| Selected Occupation of Parent(s) | | 8 | 23% |

* Where the occupation was not included in the items presented to the adults, census data and informal questioning were used to determine the stereotypic association of the occupation.

2. What would you like to be (when you grow up) if you were a girl/boy?

Tables 5 and 6 detail the responses to this question for each of the sexes. Ninety-five percent of the girls were able to visualize what they would like to be if they were a boy. In contrast, only 88% of the boys were able to do this. They more frequently responded that they had never thought about it, occasionally rather adamantly. The sexes were similiar in terms of the "accuracy" of this projection. Fifty-four percent of the choices named by the girls corresponded with the boys' responses to question number one. Likewise, 56% of the boys' choices, if they were a girl, were jobs similiar to those cited by the girls in answering question number one.

Sixty-two percent of the jobs named by the girls were male-stereotyped as defined by the adult validation sample. Similiarly, 62% of those named by the boys were female-stereotyped according to that criteria. The remaining jobs named in answer to this question were neutral or sex-reversed in association.

Only one of the girls did not change her occupational choice when visualizing herself as a boy. She retained her original choice of teacher. Two of the girls responded with their father's occupation when asked this question. Two of the boys retained their original choice when answering this question. The occupation in both cases was that of police officer.

An interesting line of reasoning was noted in the responses of five of the boys, who named an occupation involving lower level participation in their original occupational choice. For example:

| What would you like to be ...? | ... if you were a girl? |
|---|---|
| Doctor | Nurse |
| Policeman | Crossing Gaurd |
| Scientist | Scientist's Assistant |

Table 5

Girls' Responses to the Question,
"What would you like to be (when you grow up) if you were a boy?"

| Occupation | Adult Consensus * | A Choice of Boys ** | Number of Times Given | Percent of Total Sample (N = 37) |
|---|---|---|---|---|
| Don't Know | | | 9 | 24% |
| Doctor | Men/Both | X | 9 | 24% |
| Policeman | Men | X | 6 | 16% |
| Fireman | Men | X | 4 | 11% |
| Athlete | Both | X | 3 | 8% |
| Truck Driver | Men | X | 3 | 8% |
| Lawyer | Men | X | 2 | 5% |
| Mechanic | Men | X | 2 | 5% |
| Astronaut | Men | | 1 | 3% |
| Mailman | Men | | 1 | 3% |
| Niagra Mohawk | - | | 1 | 3% |
| State Worker | Both | | 1 | 3% |
| Teacher | Both | | 1 | 3% |
| Writer | Both | | 1 | 3% |

* Where the occupation was not included in the items presented to the adults, census data and informal questioning were used to determine the stereotypic association of the occupation.

** This column indicates when the occupation is one that was named by the male portion of the sample in their response to question number one (see Table 4).

Table 6

Boys' Responses to the Question,
"What would you like to be (when you grow up) if you were a girl?"

| Occupation | Adult Consensus* | A Choice of Girls** | Number of Times Given | Percent of Total Sample (N = 35) |
|---|---|---|---|---|
| Don't Know | | | 8 | 23% |
| Nurse | Women | X | 7 | 20% |
| Policewoman | Women | X | 5 | 14% |
| Housewife | Women | | 4 | 11% |
| Hairstylist | Women/Both | | 2 | 6% |
| Scientist's Assistant | - | | 2 | 6% |
| Babysitter | Women | | 1 | 3% |
| Ballet Dancer | Women/Both | | 1 | 3% |
| Crossing Gaurd | Women | | 1 | 3% |
| Doctor | Men/Both | X | 1 | 3% |
| Model | Women | X | 1 | 3% |
| Mother | Women | X | 1 | 3% |
| Secretary | Women | X | 1 | 3% |
| State Worker | - | | 1 | 3% |
| Teacher | Both | X | 1 | 3% |
| Veterinarian | Men | X | 1 | 3% |
| Waitress | Both | X | 1 | 3% |

* Where the occupation was not included in the items presented to the adults, census data and informal questioning were used to determine the stereotypic association of the occupation.

** This column indicates when the occupation is one that was named by the female portion of the sample in their response to question number one (see Table 3).

In addition, five of the boys indicated that they thought they would "just" be a housewife or mother.

There were no significant differences found in the mean number of choices or range of occupations named for any of the sub-groups of the total sample in their response to this question.

When asked why they chose a different occupation in response to this question than those that they named to question number one, most of the children were unable to articulate their reasoning clearly. Table 7 describes the responses given to this question, but as the table indicates, approximately a third of the children responded that they "didn't know". The line of reasoning involved here was probably better drawn out by question number three, to which responses are detailed in Table 8.

Table 7

Children's Responses to the Question,
"Why did you chose something different if you were a boy/girl?"

| Response | Boys | Girls | Total |
|---|---|---|---|
| Don't Know | 15 | 12 | 27 |
| Because boys and girls do different things. | 11 | 10 | 21 |
| Because boys and girls do the same things. | 5 | 2 | 7 |
| Because boys do harder jobs, smarter jobs, better jobs, stronger jobs, etc. | 1 | 6 | 7 |
| Because men/women just are _____s | 2 | 3 | 5 |

3. How did you decide who could do each of the jobs on the list? What kind of things did you think about when choosing your answers to the questions?

The interviewer probed rather extensively with this question. When a child did not seem able to respond right away, she would provide examples based on the child's responses to the inventory: "Like, why did you decide that being a farmer is only a man's job and not something that ladies can do?" This method was usually successful in eliciting more elaborate explanations of the children's reasoning.

The children provided a wide variety of responses to this question. For purposes of comparison, their responses have been grouped into fourteen descriptive categories based on similiarity of response. Table 8 defines these categories and provides examples of the type of responses that were assigned to each. This set of categories was then used in Tables 9, 10, and 11 to compare the percentage of children in the various subgroups who used these different criteria in making their responses to the inventory.

The overwhelming line of response was that of observation - category nine. All of the children, regardless of sex, grade, or level of classification skill used what they had "seen" or "heard of" as at least one of their criteria for response.

Table 9 indicates that there are some significant differences among children at the various levels of classification skill in terms of the reasoning behind their responses to questions about occupational roles. Within the first three categories, it is the children at the upper levels who appear to be reasoning that the sexes do different things based on specific qualities and abilities that each sex possesses. Their

Table 8

Descriptive Categories of Response to the Question, "How did you decide who could do each of the jobs on the list? ..."

1. Division of labor. Men and women do different things.

   Men do most jobs, more jobs, the hard jobs, the dangerous jobs.
   Men fix things, work outside of the home.
   Women do the easier jobs, the nice jobs, the domestic jobs.
   Women work in the home, do housework, and care for their families.

---

2. Specific qualities of men that make them suited for particular jobs.

   Men are strong, big, tough, have more muscles - physical qualities.
   Men are strict, yell loud, mean - aggressive qualities.
   Men are intelligent, smart, know more, know what to do, know how to fix things.
   Men are interested in cars, don't like to clean and do housework, are lazy, embarassed to dance, and can handle dangerous situations.

---

3. Specific qualities of women that make them suited for particular jobs.

   Women are good with paper, good shoppers, and do "nice" jobs.
   Women are afraid to yell, nervous, afraid, faint a lot, worry about their hair, have a distaste for dirty jobs, are dumb, don't like to walk a lot, etc.

---

4. Inability on the part of men to perform certain jobs.

   Men can't type.

---

5. Inability on the part of women to perform certain jobs.

   Women are not smart, can't understand things that are complicated, don't know how, find some things too hard.
   Women don't know how to: drive, fix cars, use guns, build things, read control dials, etc.
   Women can't do dangerous jobs: they may fall, might die, might get hurt, may get hit by sparks, can't handle tension.

---

6. Within an occupational area, men hold the positions of authority, whereas women's jobs are frequently those of lesser importance.

   Women like/need to be told what to do, to be supervised. They are the assistants and helpers. For example:

| Men | Women |
|---|---|
| Construction Worker . . . | Orders shipments in the office |
| Dentist . . . . . | Hygienist, Secretary |
| Boss . . . . . | Secretary |
| Army, soldier . . . . . | Army, but can't fight |
| Doctor . . . . . | Nurse |
| Police Officer . . . . . | Crossing gaurd, Dispatcher |

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Table 8 (cont.)

Descriptive Categories of Response to the Question,
"How did you decide who could do each of the jobs on the list?..."

7. Notions of attributes, desires, and propriety that are sex-specific.

Men/women aren't "supposed" to do it (i.e. a particular job), were/were not "made" for it, are/aren't "fit" for it, mostly "think" of it, "like it" better, are "picked" for it, can do it "better".
"They" only "allow" men/women to do it, it's not "proper", it's not the job for them, etc.

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8. Specific associations of sex with occupation. Dichotomous categories.

Ladies are nurses and men are doctors.
It's a ladies/men's job. A farmer is a man.
Ladies can't be _____ because ladies aren't men.
Men can't be girls because they're boys.

---

9. Based on what they have or have not "seen" and/or "heard of".

Personally seen, a relative or friend of the family.
Seen in the media, discussed in school, at home, with peers, etc.

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10. Evokes humorous image regarding appearance.

A man can't be a nurse because he would have to wear a dress.
Men would look funny dancing - dresses, stockings, etc.
A lady would look funny being a tomboy.
It wouldn't look right, it would look funny.

---

11. Semantic distinction.

A butler and a maid do the same job, but when it's a man he is called a butler, not a maid.
Ladies can't be firemen because it's called a fireman.

---

12. Men and women have the same abilities.

Men and women aren't different. Both can do the same kinds of things. Both can: drive, dance, be a boss, etc.
Both can do any job as long as they have the proper training.

---

13. Based on a statement of equal rights.

Mention of the Equal Rights Amendment.
God created men and women equal. They can be as many things as they want, they can be whatever they want to try to be.

---

14. Could not articulate reasoning.

I just "knew" it. Shrugs, etc.

reasoning along this line is seen again in category six, where they appear to be working out a more specific system of relations among men's and women's jobs.

The children in Level III tended to be the ones who elaborated on semantic distinctions, category eleven, again indicating that their classification system might be somewhat more elaborate. This is seen again in their greater percentage of response to categories twelve and thirteen - they are aware that men and women possess similiar abilities and can conceive of them doing the same jobs, even when they have not actually observed this. They are able to articulate a more abstract statement of equal rights based on this system of occupational classification that appears to be developing.

The children of Levels I and II were aware of the sexes similiar abilities and overlapping attributes to a lesser degree. A line of reasoning more popular with the children at these lower levels of classification skill is evident in categories four and five, i.e. a somewhat exclusive approach - men and women cannot do certain jobs that, in the children's minds, are associated with the opposite sex. Likewise, the children at Levels I and II tend to be the ones to employ categories seven and eight, using more vague and absolute associations of occupation with sex, with no consideration of the abilities or attributes required. The remaining categories that tend to be dominated by the lower levels are those involving a humorous image of appearance, again not giving consideration to abilities and job characteristics, as is seen in their response to category ten. Finally, these are the children who were most often unable to articulate any line of reasoning, as seen in their larger representation in category fourteen.

Table 9

Percent of Subjects Responding in the Various Categories of Response to Question Three, According to Level of Classification Skill

| Category | $\chi^2$ (2) | I N=19 | II N=30 | III N=23 | Total N=72 |
|---|---|---|---|---|---|
| 1. Division of labor. Men and women do different things. | 16.47 $p<.001$ | 26% | 59% | 65% | 49% |
| 2. Specific qualities of men that make them suited for particular jobs. | 22.38 $p<.001$ | 26% | 73% | 61% | 57% |
| 3. Specific qualities of women that make them suited for particular jobs. | N.S. | 26% | 27% | 35% | 29% |
| 4. Inability on the part of men to perform certain jobs. | 9.32 $p<.01$ | 21% | 7% | 9% | 11% |
| 5. Inability on the part of women to perform certain jobs. | 7.35 $p<.05$ | 47% | 47% | 26% | 40% |
| 6. Within an occupational area, men hold the positions of authority, whereas women's jobs are frequently those of lesser importance. | 18.92 $p<.001$ | 0% | 20% | 17% | 14% |
| 7. Notions of attributes, desires, and propriety that are sex-specific. | N.S. | 21% | 13% | 13% | 15% |
| 8. Specific associations of sex with occupation. Dichotomous categories. | 11.46 $p<.01$ | 26% | 30% | 9% | 22% |
| 9. Based on what they have or have not "seen" and/or "heard of". | N.S. | 100% | 100% | 100% | 100% |
| 10. Evokes humorous image with regard to appearance. | 11.29 $p<.01$ | 21% | 17% | 4% | 14% |
| 11. Semantic distinction. | 18.88 $p<.001$ | 11% | 7% | 30% | 15% |
| 12. Men and women have the same abilities. | 4.78 $p<.10$ | 42% | 37% | 57% | 44% |
| 13. Based on a statement of equal rights. | 6.38 $p<.05$ | 5% | 13% | 17% | 13% |
| 14. Could not articulate reasoning. | 9.32 $p<.01$ | 21% | 7% | 9% | 11% |

The response distribution in Table 10, according to differences in grade level, is less clear. Again, the overwhelming response rate was in category nine, that of what the children had observed.

The older children seemed to be aware of a division of labor and to be forming some idea of how this division operated, as is seen in their larger percentage of response to categories one, two, and six. In contrast, they also appear to be more acutely aware of the similiarities among the sexes, as is seen in their dominance of categories twelve and thirteen.

The younger children more often tended to make more specific associations of sex with occupation, rationalizing that men and women just "like" certain jobs that they are "fit" to do (categories seven and eight). It is mainly the younger children who compromise category fourteen, who were not able to articulate the reasoning that they used in responding to the inventory other than what they had seen.

The sexes did not differ significantly in their responses to the majority of the categories. Where differences were present, Table 11 indicates that the females consistently evidenced a higher response rate, perhaps indicating that they have given these questions a bit more thought and/or noticed more about the differences between the occupational roles of the sexes. They tended to respond that the sexes do different things. These "things" appear to be: women do domestic jobs (category three), and are unable to do many of the jobs that men do (category five); while there are basically very few things that men are unable to do (category four). The girls also more frequently found it funny to visualize men doing women's jobs and vice versa (category ten) . Again, both sexes relied on what they had observed more than any other single factor in making their responses to the inventory.

Table 10

Percent of Subjects Responding in the Various Categories of Response to Question Three, According to Grade Level

| Category | $\chi^2$ (2) | 1 N=26 | 3 N=26 | 5 N=20 | Total N=72 |
|---|---|---|---|---|---|
| 1. Division of labor. Men and women do different things. | 6.34 $p < .05$ | 35% | 58% | 55% | 41% |
| 2. Specific qualities of men that make them suited for particular jobs. | 35.03 $p < .001$ | 31% | 54% | 95% | 57% |
| 3. Specific qualities of women that make them suited for particular jobs. | N.S. | 35% | 31% | 20% | 29% |
| 4. Inability on the part of men to perform certain jobs. | 4.92 $p < .10$ | 15% | 12% | 5% | 11% |
| 5. Inability on the part of women to perform certain jobs. | N.S. | 38% | 42% | 40% | 40% |
| 6. Within an occupational area, men hold the positions of authority, whereas women's jobs are frequently those of lesser importance. | 11.24 $p < .01$ | 4% | 19% | 20% | 14% |
| 7. Notions of attributes, desires, and propriety that are sex-specific. | 9.13 $p < .05$ | 15% | 8% | 25% | 15% |
| 8. Specific associations of sex with occupation. Dichotomous categories. | N.S. | 27% | 23% | 15% | 22% |
| 9. Based on what they have or have not "seen" and/or "heard of". | N.S. | 100% | 100% | 100% | 100% |
| 10. Evokes humorous image with regard to appearance. | 14.41 $p < .001$ | 12% | 23% | 5% | 14% |
| 11. Semantic distinction. | 14.63 $p < .001$ | 4% | 19% | 25% | 15% |
| 12. Men and women have the same abilities. | 25.11 $p < .001$ | 19% | 54% | 65% | 44% |
| 13. Based on a statement of equal rights. | 28.00 $p < .001$ | 8% | 4% | 30% | 13% |
| 14. Could not articulate reasoning. | 24.18 $p < .001$ | 23% | 0% | 10% | 11% |

Table 11

Percent of Subjects Responding in the Various Categories of Responses to Question Three, According to Sex

| Category | $\chi^2(1)$ | Female N=37 | Male N=35 | Total N=72 |
|---|---|---|---|---|
| 1. Division of labor. Men and women do different things. | 5.04 $p<.05$ | 59% | 37% | 49% |
| 2. Specific qualities of men that make them suited for particular jobs. | N.S. | 59% | 54% | 57% |
| 3. Specific qualities of women that make them suited for particular jobs. | 9.93 $p<.01$ | 41% | 17% | 29% |
| 4. Inability on the part of men to perform certain jobs. | 11.64 $p<.001$ | 19% | 3% | 11% |
| 5. Inability on the part of women to perform certain jobs. | 4.05 $p<.05$ | 49% | 31% | 40% |
| 6. Within an occupational area, men hold the positions of authority, whereas women's jobs are frequently those of lesser importance. | N.S. | 11% | 17% | 14% |
| 7. Notions of attributes, desires, and propriety that are sex-specific. | N.S. | 11% | 20% | 15% |
| 8. Specific associations of sex with occupation. Dichotomous categories. | N.S. | 27% | 17% | 22% |
| 9. Based on what they have or have not "seen" and/or "heard of". | N.S. | 100% | 100% | 100% |
| 10. Evokes humorous image with regard to appearance. | 9.14 $p<.01$ | 22% | 6% | 14% |
| 11. Semantic distinction. | N.S. | 16% | 14% | 15% |
| 12. Men and women have the same abilities. | N.S. | 46% | 43% | 44% |
| 13. Based on a statement of equal rights. | N.S. | 16% | 9% | 13% |
| 14. Could not articulate reasoning. | 11.64 $p<.001$ | 19% | 3% | 11% |

## DISCUSSION

The data reported here revealed several interesting aspects of the hypothesized relationship between a child's level of classification skill and the flexibility of his/her occupational stereotypes. While the quantitative data indicate that there is an increase in the flexibility of occupational stereotypes with age, they also indicate that caution should be used in interpreting this type of finding as supporting a cognitive explanation for the development of occupational role stereotypes. Garrett and her associates (1977) interpreted this increased flexibility that occurred with age to be a result of the more sophisticated level of classification competency of the older children. The current data indicates that when classification competency is examined directly, it does not account for all of the differences in flexibility among children in different grades. However, the effects of cognitive development represented by differences in level of classification skill were more clearly seen in the qualitative analysis of responses to the open-ended questions.

The data does not lend much clarification to a model that accounts for social learning and cognitive developmental factors. While age appears to be the more salient variable in the flexibility of children's occupational stereotypes, level of classification skill was also operative. The pattern of the observed age differences appears to be somewhat complex. As Garrett and her associates pointed out (1977), if strictly cumulative social learning were operating, one would expect the older children to be <u>more</u> stereotyped, to "know" the prevailing occupational stereotypes more accurately as a result of having been exposed to them longer than the younger children. Yet they are observed

to be more flexible in their responses. It appears logical that differences in their cognitive sophistication would provide an explanation of this finding.

It would seem that observational learning is the more crucial factor. The data in Table 9 indicate that even the children at the preoperational Level I appear to form their concepts of occupational role on the basis of what they have seen. Since the data do not indicate that there are specific cognitive prerequisites for the ability to process this type of information, one might interpret this to mean that career education programs could effectively begin as early as the preschool level. While cognitive maturity may play a role in lending more sophisticated interpretation to a child's observational learning, it appears that children begin to accumulate information about occupational participation at early ages, and that they form occupational role stereotypes based on this information.

The current findings differed from those of previous research (Beuf, 1974; Crow & Taebel, 1976; Iglitzin, 1972; Scheresky, 1977; Siegel, 1973; Tibbetts, 1975) in that the children as a group were not markedly stereotyped. These findings are more similiar to those of Lerner and his associates (1976a, 1976b) in this regard. The children were quite egalitarian in their perceptions of adult occupational roles. This may indicate that current changes in the labor force and the movement for equal rights are having an observable effect. Or, it may be mainly due to differences in instrumentation.

Another finding that is contrary to those of previous studies involves differences in the responses of the sexes. Past research has noted differential response and occupational foreclosure in children's

perceptions of occupational roles (Crow & Taebel, 1976; Kirchner & Vondracek, 1973; Looft, 1971a, 1971b; Mott & Moore, 1976; Schlossberg & Goodman, 1972; Siegel, 1973). In contrast, the children of this sample saw the majority of jobs as being something that both men and women have the ability to do. Previous studies have also found boys to be less flexible than girls. On the contrary, the males of this sample tended to be more flexible in their occupational stereotypes. In general, however, the sexes did not differ significantly in their perceptions of occupational roles. This finding is similiar to those of several other studies (Lerner et al, 1976a, 1976b; Scheresky, 1977; Schlossberg & Goodman, 1972; Tibbetts, 1975). Apparently the sexes are not receiving as much differential information about occupations as has been the case in the past.

However, these egalitarian perceptions are not being translated into the children's personal vocational aspirations, as is evidenced by their responses to the open-ended questions. This finding is in agreement with those of several previous studies (Iglitzin, 1972; Kirchner & Vondracek, 1973; Lerner et al, 1976a, 1976b; Looft, 1971a, 1971b; Schlossberg & Goodman, 1972; Siegel, 1972; Tibbetts, 1975). Although both sexes named a similiar numerical range of occupational choices, they clearly differed in the specific occupations they selected, with little overlap in their personal choices.

An interesting finding was that the boys, who tended to be a bit more flexible in their perceptions of occupational roles, were found to be more traditional and stereotyped in their personal occupational choices. They appear to be aware that women are participating in jobs that were traditionally male-dominated and vice versa, yet none of them

named a traditionally female-associated job among their personal occupational choices. The implication here is that the children's responses probably are reflective of the current changes occuring in women's roles - changes which several authors have noted are not being accompanied by corresponding changes in the roles of men (Kaplan & Bean, 1976).

In contrast, the girls named a larger percentage of non-traditionally stereotyped jobs among their occupational choices, and several of these were traditionally male-associated occupations. It would seem that the girls are a bit more reality oriented, and rightly so, since the limitations as well as the expansions in the area of occupational roles more frequently apply to females. They were more likely to perceive that not all jobs are in the domain of women. Yet they personally aspired to the non-traditional occupations in which they have observed women participating.

Further research is needed in efforts to establish an eclectic model for the development of role knowledge in children. In a study utilizing an occupational inventory such as this one, a larger sample as well as random assignment of subjects to both female and male interviewers might serve to evidence more significant differences among children at different levels of classification skill in their concepts of adult occupational roles. A major limitation of this study was that the sole interviewer was female. This fact may have inflated the number of "Both" responses offered by the children. It may be that placing a female in this rather authoritative position might make a child feel that the interviewer "wanted" to hear that women could perform the jobs in question.

There were evident differences in level of classification skill in the reasoning underlying the children's responses to the open-ended questions. The children at the more complex level of classification skill more clearly understood why both sexes can perform similiar jobs. In contrast, the less cognitively mature children more frequently would respond that both men and women could be a(n) _____ because "they both like to do it", etc. It would appear that multiple classification ability allows children to perceive that the specific characteristics and abilities required to perform certain occupations are not strictly associated with one sex or the other. This should increase their ability to bring about more resolution in their conceptions of sex roles.

While multiple classification skills allow for more elaborate reasoning about occupational roles, it appears that response flexibility can be present prior to the acquisition of these skills if a broad range of role models has been presented to the child. In seeing both sexes perform a variety of jobs, less cognitively mature children are not as likely to develop strict associations of occupation with sex. When those children do acquire multiple classification skills, they will become equipped with a more complex cognitive structure within which to process and understand these observed similiarities. It is the Level III children that we would most expect to respond in the abstract, basing their responses on their classification system, and not strictly on personal observation - for example, "I've never seen a man nurse, but if a lady can be a doctor, then a man can be a nurse."

The responses of the children describing their reasoning in Tables 9, 10, and 11 indicate that many of them associate specific and often

exclusive characteristics, abilities, and inabilities with the sexes, and to this end apply these sex role stereotypes in forming their concepts of adult occupational roles. Yet the larger percentage of response in the category involving observation seems to imply that, despite these stereotypic characteristics that the children hold, they are observing both sexes perform a wide variety of jobs and that this is having a larger effect on their conceptions of occupational roles.

This fact is encouraging. If the effects of social learning and cognitive developmental factors on the development of occupational stereotypes cannot be separated, career education should direct its efforts to the portion of the contributing factors that are subject to change. It is unlikely that a child's cognitive development can be altered appreciably (Flavell, 1977). The schools, through programs of career education, have a significant opportunity to alter the social learning environment of the children placed in their charge.

It would appear that there is a need for more social learning interventions along the lines of career education. Research would seem called for to investigate if, indeed, presentation of a broad range of non-traditional occupational role models leads to less traditional occupational role stereotypes on the part of children.

Another interesting line of pursuit would be to investigate <u>why</u> children are not applying their egalitarian perceptions of occupational roles to their personal occupational choices. Social learning theory holds that a main function of role stereotypes is to provide standards by which a person guides his/her own behavior (Mischel, 1971). As mentioned previously, if the occupational aspirations of persons in this society do not broaden to include more non-traditional avenues of pursuit, the adults of future generations will not find jobs available to them.

Perhaps one reason why the egalitarian perceptions of children are not being translated into personal occupational choices is that adults are providing a "do-as-I-say, not-as-I-do" model for children. Children are being told and shown that the sexes are similiar in ability and in the options that are available to them, but on a more subtle level, they perceive that the sexes are rewarded differentially for their behavior and are operating under different sets of expectations (Miran, 1975; Mischel, 1966, 1970, 1971; Motta & Vane, 1976). Teacher expectations and perceptions of student behavior subtlely reinforce sex role differences in children as well as the children's perception of these differences.

Providing children with similiarity of experience and expectations in addition to providing a broad range of role models may be the only winning combination for career education. Future research and development in the area of career education might examine this interrelationship.

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